

ABSTRACT

A method of cultivating crops and cover-crops, interactively and sustainably, using a novel hot water apparatus. The apparatus enables the farmer to prepare a soil bed for planting with a no-till method that: controls nematodes and soil pathogens, promotes nutrient cycling of cover crops and organic materials, kills weeds and weed seeds, and cultivates healthy soil micro flora. A low-pressure (5- 60 psi) hot water (120-209F) delivery system, characterized by a flexible mat which evenly distributes water to the underside of the mat where an attached layer of material with a high water holding capacity saturates and conducts scalding water onto the weeds. A hot water recirculation and heat exchange system reduces water demands while maintaining a high thermo charge in the mat. After soil cools, plants or seeds are planted directly through the mulch of dead weeds or cover crop. Inoculation of soil of microbes promote soil health and crop production.